

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
24 February 2005 (24.02.2005)

PCT

(10) International Publication Number
WO 2005/016577 A2

(51) International Patent Classification⁷:

B22D

[US/US]; 1657 Prestwick Lane, Carmel, IN 46032 (US).
LAYMON, Steve [US/US]; 5820 Foolish Pleasure Lane,
Indianapolis, IN 46237 (US).

(21) International Application Number:

PCT/US2004/026480

(22) International Filing Date: 16 August 2004 (16.08.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/495,079	14 August 2003 (14.08.2003)	US
60/497,601	25 August 2003 (25.08.2003)	US
60/577,055	4 June 2004 (04.06.2004)	US

(71) Applicant (for all designated States except US): **U.S. TURBO, LLC** [US/US]; 6228 La Pas Trail, Indianapolis, IN 46268 (US).

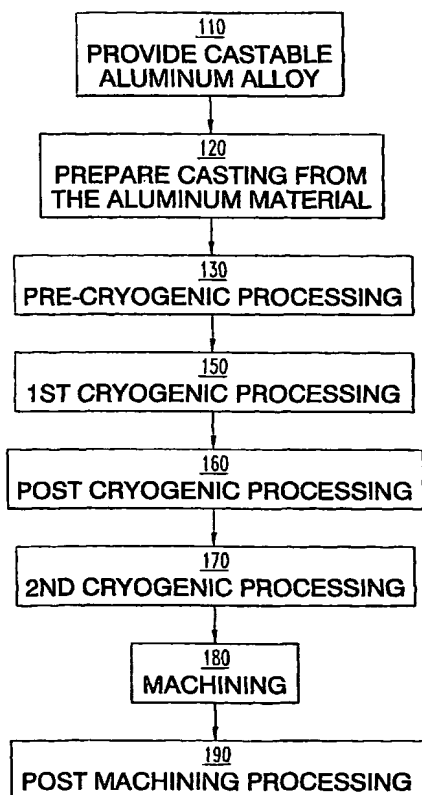
(72) Inventors; and

(75) Inventors/Applicants (for US only): **CAMPBELL, Tim**

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

[Continued on next page]

(54) Title: PROCESSING FOR CAST COMPONENTS



(57) Abstract: Methods and apparatus for cast metallic components with improved fatigue characteristics. Some embodiments include cryogenic processing of the cast material, such as aluminum C355,354, or A354, and alloys such as Inconel 713C, IN713LC, IN-738, IN-100 or GMR235 prior to or after machining of the cast component. Other embodiments include an object cast from an aluminum compound including up to 1 percent scandium, 1 percent lithium, or combinations of the two.



(84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.